PCT

RAW SEQUENCE LISTING DATE: 09/10/2004
PATENT APPLICATION: **US/09/980,758A** TIME: 16:16:37

Input Set : **A:\PTO.FG.txt**
Output Set: **N:\CRF4\09102004\I980758A.raw**

p.6

ENTERED

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      3 <110> APPLICANT: ROBERTS, James A.
      4       KELLY, Beth L.
      6 <120> TITLE OF INVENTION: METHODS FOR INCREASING PLANT CELL PROLIFERATION BY
FUNCTIONALLY
      7       INHIBITING A PLANT CYCLIN INHIBITOR GENE
      9 <130> FILE REFERENCE: 14538A-45-1
     11 <140> CURRENT APPLICATION NUMBER: 09/980,758A
     12 <141> CURRENT FILING DATE: 2001-11-13
     14 <150> PRIOR APPLICATION NUMBER: PCT/US00/13379
     15 <151> PRIOR FILING DATE: 2000-05-15
     17 <150> PRIOR APPLICATION NUMBER: US 60/134,373
     18 <151> PRIOR FILING DATE: 1999-05-14
     20 <160> NUMBER OF SEQ ID NOS: 22
     22 <170> SOFTWARE: PatentIn version 3.1
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     25 <211> LENGTH: 408
     26 <212> TYPE: DNA
     27 <213> ORGANISM: Arabidopsis thaliana
     29 <400> SEQUENCE: 1
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     32 ttcaagaaac aagttcctca acacaacaac atcaacacaa gtataactct cgatcaaaca    120
     34 tctacatcta ctattgtctc tacatgttct tcttcatcaa cgactttgtc ttctcctcta    180
     36 gacacaatct actctgttcc ctctccatcc ccagcagcgg tgctgacgtc accaggcggt    240
     38 tgttgtaccc cgaaagccaa gaagtctagg ataccggaga tgctgacgtg tccaccggcg    300
     40 ccgaagaagc aaagggtctc gaaaaactgt gtgttacgac ggagacagat cgttttcttt    360
     42 gctccgccgg agatagagct cttcttcgtc aacgcacacg atcgatga                 408
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     46 <211> LENGTH: 135
     47 <212> TYPE: PRT
     48 <213> ORGANISM: Arabidopsis thaliana
     50 <400> SEQUENCE: 2
     52 Met Ala Ser Lys Lys Ala Arg Lys Pro Asn Arg Ala Glu Lys Lys Leu
     53 1               5                  10                  15
     56 Thr Arg Ser Cys Phe Lys Lys Gln Val Pro Gln His Asn Asn Ile Asn
     57             20                  25                  30
     60 Thr Ser Ile Thr Leu Asp Gln Thr Ser Thr Ser Thr Ile Val Ser Thr
     61         35                  40                  45
     64 Cys Ser Ser Ser Ser Thr Thr Leu Ser Ser Pro Leu Asp Thr Ile Tyr
     65     50                  55                  60
     68 Ser Val Pro Ser Pro Ser Pro Ala Ala Val Leu Thr Ser Pro Gly Gly
     69 65                  70                  75                  80
     72 Cys Cys Thr Pro Lys Ala Lys Lys Ser Arg Ile Pro Glu Met Leu Thr
     73                 85                  90                  95
     76 Cys Pro Pro Ala Pro Lys Lys Gln Arg Val Ser Lys Asn Cys Val Leu
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Input Set : **A:\PTO.FG.txt**
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77             100                 105                 110
80 Arg Arg Arg Gln Ile Val Phe Phe Ala Pro Pro Glu Ile Glu Leu Phe
81         115                 120                 125
84 Phe Val Asn Ala His Asp Arg
85     130                 135
88 <210> SEQ ID NO: 3
89 <211> LENGTH: 639
90 <212> TYPE: DNA
91 <213> ORGANISM: Arabidopsis thaliana
93 <400> SEQUENCE: 3
94 ctcgagattt accaaaaaag tttcccaaaa aaacaaaaac atacacaagt ttagatatgg     60
96 atcttgaatt actacaagat ttgtccaaat tcaatttccc aacacccatc aagatccgat    120
98 ccaaaacctc aaaaacaaag aaggacgaag gtgatgacga cgaagatgac ctccgctgca    180
100 gcacacccac atcccaagaa cacaagattc ccgccgtcgt agactctcca cctcctccgc    240
102 cgagaaaacc ccggccacca ccgtcagcac cgtcggctac ggcggctctg atgatcagat    300
104 cgtgcaagag gaagctttta gtgtcgactt gtgagataat catgaatcgg gaagagattg    360
106 accgtttctt ctcctccgtc tacaatgaga cgtcgactac ggctaaacgg cggagaagtt    420
108 acccttattg ttctcgaaga tgaggcttaa ttcaatattt acatttttt acagttttac    480
110 tggaaatatt gtgaaattaa ttatctgttg gtgttcggtt ttaaatattt ttaatttaat    540
112 tatgaatatg gatggataat tttctgcaac cgcgcatatt aatttcgcat ggaggggtcg    600
114 atgttgtaaa ttgagtaata aatgaaggta aatctcgag                          639
117 <210> SEQ ID NO: 4
118 <211> LENGTH: 213
119 <212> TYPE: PRT
120 <213> ORGANISM: Arabidopsis thaliana
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123 <221> NAME/KEY: MISC_FEATURE
124 <222> LOCATION: (148)..(148)
125 <223> OTHER INFORMATION: Xaa = any amino acid
128 <220> FEATURE:
129 <221> NAME/KEY: MISC_FEATURE
130 <222> LOCATION: (165)..(165)
131 <223> OTHER INFORMATION: Xaa = any amino acid
134 <220> FEATURE:
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136 <222> LOCATION: (167)..(167)
137 <223> OTHER INFORMATION: Xaa = any amino acid
140 <220> FEATURE:
141 <221> NAME/KEY: MISC_FEATURE
142 <222> LOCATION: (175)..(175)
143 <223> OTHER INFORMATION: Xaa = any amino acid
146 <220> FEATURE:
147 <221> NAME/KEY: MISC_FEATURE
148 <222> LOCATION: (182)..(182)
149 <223> OTHER INFORMATION: Xaa = any amino acid
152 <220> FEATURE:
153 <221> NAME/KEY: MISC_FEATURE
154 <222> LOCATION: (205)..(205)
155 <223> OTHER INFORMATION: Xaa = any amino acid
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Input Set : **A:\PTO.FG.txt**
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158 <400> SEQUENCE: 4
160 Pro Arg Asp Leu Pro Lys Lys Phe Pro Lys Lys Thr Lys Thr Tyr Thr
161 1 5 10 15
164 Ser Leu Asp Met Asp Leu Glu Leu Leu Gln Asp Leu Ser Lys Phe Asn
165 20 25 30
168 Phe Pro Thr Pro Ile Lys Ile Arg Ser Lys Thr Ser Lys Thr Lys Lys
169 35 40 45
172 Asp Glu Gly Asp Asp Asp Glu Asp Asp Leu Arg Cys Ser Thr Pro Thr
173 50 55 60
176 Ser Gln Glu His Lys Ile Pro Ala Val Val Asp Ser Pro Pro Pro Pro
177 65 70 75 80
180 Pro Arg Lys Pro Arg Pro Pro Pro Ser Ala Pro Ser Ala Thr Ala Ala
181 85 90 95
184 Leu Met Ile Arg Ser Cys Lys Arg Lys Leu Leu Val Ser Thr Cys Glu
185 100 105 110
188 Ile Ile Met Asn Arg Glu Glu Ile Asp Arg Phe Phe Ser Ser Val Tyr
189 115 120 125
192 Asn Glu Thr Ser Thr Thr Ala Lys Arg Arg Arg Ser Tyr Pro Tyr Cys
193 130 135 140
W--> **196 Ser Arg Arg Xaa Gly Leu Ile Gln Tyr Leu His Phe Phe Thr Val Leu**
197 145 150 155 160
200 Leu Glu Ile Leu Xaa Asn Xaa Leu Ser Val Gly Val Arg Phe Xaa Ile
201 165 170 175
204 Phe Leu Ile Glx Leu Xaa Ile Trp Met Asp Asn Phe Leu Gln Pro Arg
205 180 185 190
208 Ile Leu Ile Ser His Gly Gly Val Asp Val Val Asn Xaa Val Ile Asn
209 195 200 205
212 Glu Gly Lys Ser Arg
213 210
216 <210> SEQ ID NO: 5
217 <211> LENGTH: 809
218 <212> TYPE: DNA
219 <213> ORGANISM: Arabidopsis thaliana
221 <400> SEQUENCE: 5
222 ctcgagattt accacgagat gtggttgaag agaatggagt tacgacgacg acggtgaaac 60
224 gaaggaagat ggaggaggaa gtggatttag tggaatctag gataattctg tctccgtgtg 120
226 tacaggcgac gaatcgcggt ggaattgtgg cgagaaattc agcaggagcg tcggagacga 180
228 gtgttgttat agtacgacgg cgagattctc ctccggttga agaacagtgt caaatcgaag 240
230 aagaagattc gtcggtttcg tgttgttcta catcggaaga gaaatcgaaa cggagaatcg 300
232 aatttgtaga tcttgaggaa ataacggtg acgatcgtga aacagaaacg tcgtggattt 360
234 acgatgattt gaataagagt gaggaatcga tgaacatgga ttcttcttcg gtggctgttg 420
236 aagatgtaga gtctcgccgc aggttaagga agagtctcca tgagacggtg aaggaagctg 480
238 agttagaaga ctttttcag gtggcggaga aagatcttcg gaataagttg ttggaatgtt 540
240 ctatgaagta taacttcgat ttcgagaaag atgagccact tggtggagga agatacgagt 600
242 gggttaaatt gaatccatga agaagacgat gatgataatg atgatcattg ttttcaccaa 660
244 agtacttatt atttctcttc tgtaataatc tttgctttga ttttttcttt aacaaaatcc 720
246 aaatgtagat atctttctct cgaataatca ataacatgta attcaactaa aaaaaaaaaa 780
248 aaaaaaaaaa aaaaaaggta aatctcgag 809
251 <210> SEQ ID NO: 6

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Input Set : **A:\PTO.FG.txt**
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252 <211> LENGTH: 203
253 <212> TYPE: PRT
254 <213> ORGANISM: Arabidopsis thaliana
256 <220> FEATURE:
257 <221> NAME/KEY: MISC_FEATURE
258 <222> LOCATION: (203)..(203)
259 <223> OTHER INFORMATION: Xaa = any amino acid
262 <400> SEQUENCE: 6

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264 Pro Arg Asp Val Val Glu Glu Asn Gly Val Thr Thr Thr Val Lys
265 1               5                  10                  15
268 Arg Arg Lys Met Glu Glu Glu Val Asp Leu Val Glu Ser Arg Ile Ile
269             20                  25                  30
272 Leu Ser Pro Cys Val Gln Ala Thr Asn Arg Gly Gly Ile Val Ala Arg
273         35                  40                  45
276 Asn Ser Ala Gly Ala Ser Glu Thr Ser Val Val Ile Val Arg Arg Arg
277     50                  55                  60
280 Asp Ser Pro Pro Val Glu Glu Gln Cys Gln Ile Glu Glu Glu Asp Ser
281 65                  70                  75                  80
284 Ser Val Ser Cys Cys Ser Thr Ser Glu Glu Lys Ser Lys Arg Arg Ile
285                 85                  90                  95
288 Glu Phe Val Asp Leu Glu Glu Asn Asn Gly Asp Asp Arg Glu Thr Glu
289             100                 105                 110
292 Thr Ser Trp Ile Tyr Asp Asp Leu Asn Lys Ser Glu Glu Ser Met Asn
293         115                 120                 125
296 Met Asp Ser Ser Ser Val Ala Val Glu Asp Val Glu Ser Arg Arg Arg
297     130                 135                 140
300 Leu Arg Lys Ser Leu His Glu Thr Val Lys Glu Ala Glu Leu Glu Asp
301 145                 150                 155                 160
304 Phe Phe Gln Val Ala Glu Lys Asp Leu Arg Asn Lys Leu Leu Glu Cys
305                 165                 170                 175
308 Ser Met Lys Tyr Asn Phe Asp Phe Glu Lys Asp Glu Pro Leu Gly Gly
309             180                 185                 190
W--> 312 Gly Arg Tyr Glu Trp Val Lys Leu Asn Pro Xaa
313         195                 200
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316 <210> SEQ ID NO: 7
317 <211> LENGTH: 626
318 <212> TYPE: DNA
319 <213> ORGANISM: Arabidopsis thaliana
321 <400> SEQUENCE: 7

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322 ctcgagattt acccaaaaat ccaagagaga aaaaaatgag cgagagaaag cgagagcttg     60
324 cagaagaagc ttcaagcaca agcttctcac cactgaagaa aacgaagctt aatgattctt    120
326 ctgattcatc accggactct catgacgtca tcgtcttcgc ggtttcatct tcttccgttg    180
328 cttcgtcggc ggctttagcg tctgatgaat gttccgttac catcggtgga gaagaaagtg    240
330 atcagtcctc gagtatcagc tccggttgtt tcaccagtga atcgaaagaa atcgcgaaga    300
332 acagttcgtc gtttggtgta gatctggagg atcatcaaat cgaaaccgaa accgaaacct    360
334 caacattcat caccagcaat ttcagaaaag agacgagtcc agtgagtgag ggtttgggag    420
336 aaacgacaac agaaatggaa tcatcatcgg caacgaagag aaaacaaccg ggggtgagga    480
338 agactccaac ggcggcggag attgaggatt tgttctcgga gctagagagt ccagacgata    540
340 agaagaagca attcatagaa aagtacaact tcgatattgt caatgacgaa ccgcttgaag    600
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Input Set : **A:\PTO.FG.txt**
Output Set: **N:\CRF4\09102004\I980758A.raw**

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342 gtcgctacaa gtgggatcga ctttaa                                        626
345 <210> SEQ ID NO: 8
346 <211> LENGTH: 209
347 <212> TYPE: PRT
348 <213> ORGANISM: Arabidopsis thaliana
350 <220> FEATURE:
351 <221> NAME/KEY: MISC_FEATURE
352 <222> LOCATION: (209)..(209)
353 <223> OTHER INFORMATION: Xaa = any amino acid
356 <400> SEQUENCE: 8
358 Pro Arg Asp Leu Pro Lys Asn Pro Arg Glu Lys Lys Met Ser Glu Arg
359 1               5                  10                  15
362 Lys Arg Glu Leu Ala Glu Glu Ala Ser Ser Thr Ser Phe Ser Pro Leu
363             20                  25                  30
366 Lys Lys Thr Lys Leu Asn Asp Ser Ser Asp Ser Ser Pro Asp Ser His
367         35                  40                  45
370 Asp Val Ile Val Phe Ala Val Ser Ser Ser Ser Val Ala Ser Ser Ala
371     50                  55                  60
374 Ala Leu Ala Ser Asp Glu Cys Ser Val Thr Ile Gly Gly Glu Glu Ser
375 65                  70                  75                  80
378 Asp Gln Ser Ser Ser Ile Ser Ser Gly Cys Phe Thr Ser Glu Ser Lys
379                 85                  90                  95
382 Glu Ile Ala Lys Asn Ser Ser Ser Phe Gly Val Asp Leu Glu Asp His
383             100                 105                 110
386 Gln Ile Glu Thr Glu Thr Glu Thr Ser Thr Phe Ile Thr Ser Asn Phe
387         115                 120                 125
390 Arg Lys Glu Thr Ser Pro Val Ser Glu Gly Leu Gly Glu Thr Thr Thr
391     130                 135                 140
394 Glu Met Glu Ser Ser Ser Ala Thr Lys Arg Lys Gln Pro Gly Val Arg
395 145                 150                 155                 160
398 Lys Thr Pro Thr Ala Ala Glu Ile Glu Asp Leu Phe Ser Glu Leu Glu
399                 165                 170                 175
402 Ser Pro Asp Asp Lys Lys Lys Gln Phe Ile Glu Lys Tyr Asn Phe Asp
403             180                 185                 190
406 Ile Val Asn Asp Glu Pro Leu Glu Gly Arg Tyr Lys Trp Asp Arg Leu
407         195                 200                 205
W--> 410 Xaa
414 <210> SEQ ID NO: 9
415 <211> LENGTH: 6
416 <212> TYPE: PRT
417 <213> ORGANISM: Arabidopsis thaliana
419 <220> FEATURE:
420 <221> NAME/KEY: MISC_FEATURE
421 <222> LOCATION: (2)..(2)
422 <223> OTHER INFORMATION: Xaa = Leu, Ile or another hydrophobic amino acid
425 <220> FEATURE:
426 <221> NAME/KEY: MISC_FEATURE
427 <222> LOCATION: (3)..(3)
428 <223> OTHER INFORMATION: Xaa = Glu or Asp
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RAW SEQUENCE LISTING ERROR SUMMARY DATE: 09/10/2004
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Input Set : **A:\PTO.FG.txt**
Output Set: **N:\CRF4\09102004\I980758A.raw**

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:4; Xaa Pos. 148,165,167,175,182,205
Seq#:6; Xaa Pos. 203
Seq#:8; Xaa Pos. 209
Seq#:9; Xaa Pos. 2,3,4,5
Seq#:10; Xaa Pos. 6,7,8,9,10,13,14,18,20,21,23

VERIFICATION SUMMARY DATE: 09/10/2004
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Output Set: **N:\CRF4\09102004\I980758A.raw**

L:196 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:4 after pos.:144
M:341 Repeated in SeqNo=4
L:312 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:6 after pos.:192
L:410 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:208
L:445 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:0
L:522 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0
M:341 Repeated in SeqNo=10